# SOIL CONSERVATION

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# SOIL CONSERVATION

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★ THIS MONTH ★


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TOM DALE, Editor

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**NEW RESEARCH LABORATORIES.**—Two new soil and water conservation laboratories were dedicated at Morris, Minn. and Tempe, Ariz., during October 1959. The laboratory at Morris will do research on soil and water problems characteristic of western Minnesota and adjacent areas, while the one at Tempe will seek answers to water shortages and other soil and water problems in the arid Southwest. The Morris laboratory is equipped with three unique electronic devices for measuring water percolation in the soil.

WHAT YOU AS A READER think about SOIL CONSERVATION Magazine is important to us. If you have any strong feelings on what you like or dislike, you would like to see more of—or less of—why don't you write a letter to the Editor, SOIL CONSERVATION Magazine, Soil Conservation Service, Washington 25, D. C.

**Editors are invited to reprint material originating in this magazine.**

**FRONT COVER.**—A Northern Great Plains farmer views a 7-year-old Amur maple hedge which serves as a windbreak and wildlife cover.


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# Great Plains Conservation Program

## A Second Anniversary Report

By CYRIL LUKER

TWO years ago on a mid-December afternoon a strapping North Dakota farmer named Berthold Sackman fixed his signature to a legal-looking document and along with a couple of farmers in Texas, wrote a measure of agricultural history.

With these signatures, the Great Plains Conservation Program—fashioned as a new and handy tool for farmers and ranchers in the drought-bedeviled areas of the Great Plains States—passed from the preparation into the installation phase.

The 24 months that have passed have been generously sprinkled with unexpected turns and twists as the new program moved along. The rate at which soil and water conservation is going onto the too-often-rainless landscape and the opportunity in view for still faster progress merit for the new program an honest appraisal at this point.

The approach of the Great Plains Conservation Program to the agricultural problems of the vast area was direct and clear cut. Its objectives: To halt or reduce erosion, build drought resistance as much as possible into the operations of farmers and ranchers, and to make agriculture in the Great Plains as dependable a business as soil, climate, and agricultural science will permit.

The program's principal offering is a complete soil and water conservation plan for a farm or ranch, based on careful studies of soil and range conditions and custom cut to fit the needs of the unit and the operator thereof.

The program's built-in booster comes from cost-sharing in Federal funds, attached to a timetable for getting the basic job speeded up and done in no less than 3 years nor more than 10 on any farm or ranch.

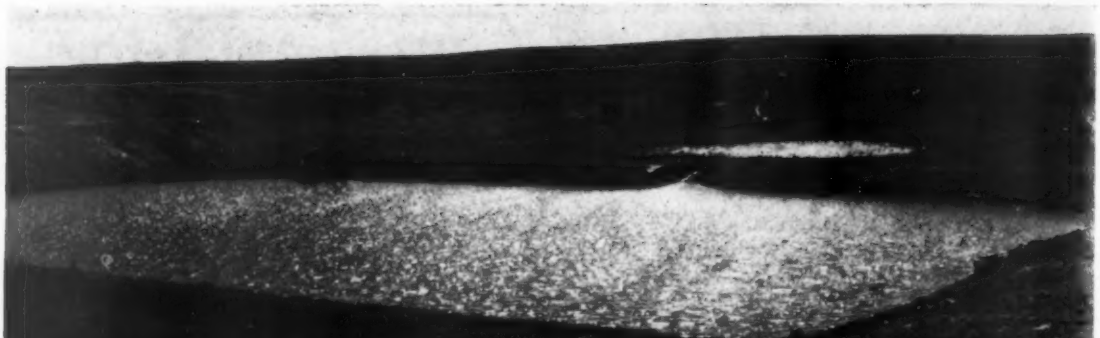
Congress put a limit of $25 million in Federal spending on the program for any single year, with a $150 million ceiling for the whole program.

An immediate target of all soil conservation work in the Great Plains is the estimated 12 to 14 million acres of low-grade cropland which is too vulnerable to wind and water, and too low in yields over a long period, to be continued in cultivation. This land, to be useful and permanently productive, must be in permanent cover. That means grass usually.

Water for all uses, including the moisture that can be stored in the soil, is another pressing concern; for, in the Plains drought can always be just around a flip of the calendar. Conservation practices are designed to make the most effective use of the water that is available. Some

Berthold Sackman (right) signing one of the first Great Plains Conservation Program contracts in December 1957.

Note:—The author is assistant to the Administrator, in charge of the Great Plains Conservation Program, Soil Conservation Service, Washington, D. C.



A stockwater dugout that is supplied from a deep well constructed as a part of the Great Plains Conservation Program on the L. D. Warne ranch near Onida, S. Dak.

of these practices require investment by the landowner in dams, wells, water-spreading systems, irrigation improvements, or spring development. The Great Plains Conservation Program is proving of great help in this respect.

At the end of the first 2 years about 3,300 farmers and ranchers had entered the program, and had taken advantage of the opportunity to apply all the needed soil and water conservation to their land in return for the technical assistance offered by the trained men of the Soil Conservation Service and for the cost-sharing in Federal funds. Federal cost-sharing is based on the average cost of installing a given practice in a county. It ranges from 50 percent in the case of some of the less urgent practices to 80 percent in high priority revegetation work.

Terracing and stripcropping on the Arthur Weinhold farm near Scottsbluff, Nebr. In addition to these conservation practices, Weinhold has seeded a part of his formerly cultivated land to grass under the Great Plains program.

The 3,300 farmers and ranchers represent about 1 percent of the 335,000 landowners and operators in the designated area of the Great Plains. Projecting the present average cost per unit for establishing enduring conservation measures (about $5,300) indicates that the spending of the entire $150 million authorized for the program will mean complete treatment for about 10 percent of all Great Plains units.

The first major problems arising at the inception of the program involved irrigation. The eagerness with which irrigation farmers hurried to make use of the engineering and cost-sharing help made an immediate braking action essential. Even with the cost-sharing for these practices at the bottom of the scale, it became evident that too large a proportion of the available money was bound to go into land leveling, ditch lining, and other irrigation practices. These practices were all worthy and useful in soil and water conservation, but Congress in designing the program had intended that irrigation play a minor role in stabilizing the Great Plains agriculture and economy. It was intended that irrigation be used mainly to provide additional dependable forage for livestock opera-

tions in building greater agricultural stability in the area. Cost-sharing for irrigation on a single unit, therefore, was limited to $2,500, or no more than about one-fourth of the total estimated contract obligation.

Then it became apparent that only a system of priorities would make sure that the program would do the job for which it was designed. Farms and ranches with urgent erosion and land use problems went into the high-priority division. Units mainly with brush problems on rangeland were less urgent and irrigation was still further down the list.

The drain upon the program's resources by large units eventually became another problem. A few large operating units, with tremendous areas to treat, could use all the funds available for a county in some instances. This was not a realistic way of doing business in a program whose main objective was to get a maximum amount of soil and water conservation work established over the entire Plains area. The move to limit cost-sharing to $2,500 times the number of years a contract was in operation raised questions here and there. But these essentials in time and Federal cost shares obviously benefit Plains farmers and ranchers, as a whole, the most.

There have been other questions at various times and places, such as the differences in rates of cost-sharing for the same practice in neighboring counties. The rates, of course, are set by county program committees assigned specifically for the task and are based on the best information the committees can gather on the cost of establishing given practices. Local differences in basic progam essentials make such variations inevitable. Means have been provided for local committees to make needed adjustments, which will help smooth out local differences and move the program forward.

**Stubble mulch farming is a key practice in the Great Plains Conservation Program. Though it does not qualify for cost-sharing, most contract signers are using it on their cultivated fields as a part of their overall conservation plans.**

From the point of view of the Soil Conservation Service, which was given administrative responsibility for the program, this new program is proving outstandingly successful. Where boards of district supervisors and the

**Edward L. Brewer of the Oklahoma Panhandle drilling grass seed on his drought-damaged range as a part of his Great Plains conservation plan. Most of the weeds and sagebrush were killed with a one-way plow before the grass seeding was started.**

representatives of local agencies and other groups have provided needed help, progress has been especially gratifying. In hundreds of the districts, the boards of supervisors have led the way in getting the Great Plains Conservation Program started on their own farms and ranches. As true leaders in soil and water conservation, these men have shown the new program to be practical and economically sound.

Most SCS technicians are finding in the Great Plains Conservation Program a means of

**Jackson W. Space of Glorieta, N. Mex., shows off some of his formerly poor rangeland that was brought back to high production through reseeding under the Great Plains Conservation Program.**

achieving most efficient use of their time. The long range plans make for better scheduling of the time of these trained SCS employees. To each of them, too, a complete conservation plan, with all needed practices applied, is a goal worth striving for.

The 221 counties originally designated by the Secretary of Agriculture for the program have grown to 344. Still others are planning to ask for designation. This is further evidence of the wide acceptance of the new program.

Representatives of the various agricultural agencies, particularly at the county level, have found in the Great Plains Conservation Program a vehicle in which they could all move ahead in service to farmers and ranchers. Cooperation has been convincing.

As for the folks most concerned, men like Bert Sackman, they are discovering in the program a source of realistic help that enables them to do within a short time a job that would be beyond their means and time if they had to depend on their own resources alone. Even if only one farmer or rancher in 10 can make use of the Great Plains Conservation Program, that's a lot of soil and water conservation applied, a lot of land used according to the way it was made, a lot of wind- and water-defying cover on soils that once blew to high heaven, and a lot of the better things of life for many thousands of families in the broad, flattish lands of the Plains.

Bert Sackman is glad the Great Plains Conservation Program came along when it did. He has had a drought to contend with, a mighty serious business when you're trying to get started in the ranching business.

Sackman worked fast and applied most of his 3-year conervation plan in 2 years. His five stockwater ponds held enough water to carry his 100-cow herd through the drouth months. As it was, he was forced to sell only the calves which he otherwise might have kept awhile. Recent rains have perked up the young stand of seeded grass, which will have the best of care a conservation rancher can give it.

"I couldn't have done this on my own," Sackman admits. "The Great Plains Conservation Program has made it possible for me to get going in the livestock business in a relatively short time. I understand the problems in soil and grass and weather that I'm dealing with. Yes, you can say I'm a conservation rancher. And I expect to stay one."

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### Announce water conservation stamp

A 4-cent commemorative postage stamp emphasizing the importance of water conservation will be released by the U.S. Post Office Department April 18 during the Seventh National Watershed Congress in Washington, D.C.

To stamp collectors and conservationists, the stamp will be a companion to the commemorative soil conservation stamp released at Rapid City, S. Dak., August 26. It will symbolize the importance of water to all individuals and communities and the urgency of its conservation and wise use.

*The Jaycees and Petroleum Institute will soon honor the 1959*

# *Outstanding Young Farmers*

By KENT ALVERSON

THROUGHOUT the length and breadth of America, local chapters of the U. S. Junior Chamber of Commerce, commonly known as Jaycees, are hard in pursuit of a brand new set of candidates for a rich and exclusive award—that of Outstanding Young Farmer of 1959.

From now through February, the search will go on. If results follow those of previous years, more than 10,000 nominations will be turned in. They will include the hardest working, sharpest thinking, and most conscientious young farm operators in the 50 States. From these choice candidates will come local, State, and National winners. Those who rise to national competition will find such honors heaped upon them that previous highlights of their lives will seem humdrum by comparison.

The Outstanding Young Farmer program is now in its sixth year. Cosponsored by the U. S. Jaycees and the American Petroleum Institute, its prime purpose is to focus public attention on the importance of agriculture in America's progress and demonstrate that farming is a profitable, satisfying occupation. It honors the Nation's farmers between the ages of 21 and 36 who have made outstanding contributions to agriculture and their individual communities.

If your conservation is showing, your chances of sharing in the honors are 30 percent better. That's the weight given to conservation accom-

Note:—The author is information specialist, Soil Conservation Service, Milwaukee, Wis.

Six SCD supervisors who were State or National champions of the 1958 Outstanding Young Farmer awards: (left to right) Joe E. Harris, supervisor, Bradley County SCD, Tenn.; L. Stanley Schoelerman, chairman of the board of commissioners, Clay County SCD, Iowa; Paul Ames, director, Coachella SCD, Calif.; Edward F. Mauldin, chairman of the board of supervisors, Colbert County SCD, Ala.; Eyer H. Boies, supervisor, Northeast Elko SCD, Nev.; and Eric J. Collier, supervisor, Marion SCD, Fla.

plishments in the scorecard used to separate the men from the boys all up and down the line.

When state winners were "wined and dined" in a 4-day celebration in Cedar Rapids, Iowa, early last year, a tally showed that nearly all of them were cooperators with their local soil conservation districts. Six of their number were members of their district governing bodies and had made valuable contributions toward conservation on a community basis.

Just in case some of your Jaycee friends may have looked with favor on your farming exploits and community leadership and are hinting rather strongly that you should be a candidate for the 1959 OYF award—perhaps you'd like to take a quick look at some of the fellows who made it to the 1958 finals. It might help you put a little more polish on this year's achievements. (If it's too late for that, perhaps you can convince your friends to "just wait till next year.")

For example, there's Paul Ames, one of four national honor winners in the 1958 event. Paul is a husky 6-footer from the Coachella Valley, Indio, Calif. He handles a 1,200-acre citrus and vegetable ranch and markets his produce through the local Co-op. Despite the volume of his farm and market operations, he finds time to serve as a member of his soil conservation district governing body. In that capacity, he was instrumental in introducing a new type of grass that has revolutionized wind erosion control in his area. With his leadership, the district has also focused attention on the need to evaluate soils before designing tile drainage systems.

In his acceptance speech before 1,200 people at the National Award Banquet, Paul said, "I feel greatly humbled to come to a part of the land where you people know how to farm so well. The association with these boys (other candidates and Jaycees) is the highlight of my existence."

Edward F. Mauldin, trim, dark-eyed and handsome cotton farmer from Alabama, is chairman of the Colbert County Soil Conservation District. He operates two farms covering nearly 2,300 acres and has conservation plans on both. At the same time he has a machinery dealership, runs a cotton gin, teaches Sunday School, and campaigns to improve the lot of the cotton farmer. He served on the governor's cotton hardship committee and is an adviser to the State legislative study committee.

You don't have to be a "big" farmer. Stanley Schoelerman of Everly, Iowa, farms only a quarter section, but he makes it produce heavily with conservation practices, a good rotation, and livestock feeding. He feeds 250 head of cattle and 400 head of hogs each year. Besides farming, he is a soil conservation district commissioner, township tax assessor, and all-around community leader.

It isn't necessary to be a district supervisor, either, though six of the state award winners were. (Eyer Boies of Nevada; Eric Collier of Florida; and Joe Harris of Tennessee, in addition to those named so far.) The important thing is that you be as outstanding in as many ways as possible—your farming, your home life, and your services to the community.

For the lucky fellows who become state candidates, the trip to the national convention is a thrilling experience. Accompanied by their wives, they spend four glorious days being toasted and entertained by national leaders in agriculture and industry. They engage in public debate on topics of national concern. Best of all, they rub elbows with others of their group who, though lumped together as farmers, live lives as different as day and night. Grass and hay are important to Eyer Boies on his Elko, Nev. cattle ranch; he isn't worried a bit by corn and cotton allotments. Ronald Heddles of Palmer, Alaska, milks cows by the light of the "midnight sun" and Makoto Nitahara picks flowers, bananas, and oranges from the volcanic cinders of Hilo, Hawaii.

To the sponsors the OYF program is a strong link to hold farm and city together. In this age of specialization it is easy to forget that this great superstructure we call our American way of life will topple over without a productive and enlightened agriculture.

So the search continues—wherever a contour furrow is turned, wherever a better field of corn or cotton is growing, wherever an animal grazes—for the young man on the farm who has matured and developed beyond the rest of the "crop." An invitation awaits him to join one of the Nation's most exclusive farm fraternities—Outstanding Young Farmer.

# WILD TURKEYS IN NEBRASKA

By WILFRED J. STUART

IN the fall of 1953, the Gordon Wildlife Club turned loose some wild turkeys on the Niobrara River, south of Gordon. These turkeys, imported from West Virginia, consisted of four hens and two gobblers. Today, about 100 turkeys are living near the river in a 20-square mile area.

The members of the wildlife club that spearheaded the drive to import wild turkeys were Bill Davis and M. W. Mills of Gordon. The turkeys were turned loose originally on the Mills ranch. Mr. Mills is a cooperator of the Sheridan County Soil and Water Conservation District and is planting two shelterbelts this year for wildlife protection.

Mills and other cooperators of the soil conservation district have encouraged the spread of the turkeys by applying such practices as stubble mulch tillage, improved range and pasture management, planting of field and farmstead windbreaks, and the growing of grasses and legumes for seed.

These magnificent birds, true natives of the North American Continent, were the ones that Ben Franklin wanted to make our national bird instead of the bald eagle.

Note:—The author is work unit conservationist, Soil Conservation Service, Rushville, Nebr.

Group of wild turkeys on the M. W. Mills ranch.

The turkeys stayed on the Mills ranch for the first 3 years after being released. In 1957, 34 turkeys were hatched there but in 1958 they scattered and not a single hen was known to nest on the original site of release.

At night these big birds roost in the top of the highest trees they can find and during the day they feed on such things as weed seeds, insects, and grain. When they are full grown wild turkey gobblers will weigh up to 20 pounds and hens up to 12 pounds.

Wild turkey in flight near the Niobrara River.

During the mating season a gobbler will gather four or five hens together and the hens will nest nearby. Turkey hens hatch one brood of poults per year with the average nest containing 12 eggs.

Wild turkeys usually migrate over about a 10-mile area but occasionally they will migrate farther. Ideal turkey ranges need frequent watering places and forested areas for shelter and roostings, so the Niobrara River area qualifies from these standpoints.

Wildlife fans in Sheridan County are hoping that the wild turkeys on the Niobrara will keep on increasing. Perhaps in a few years the Gordon Wildlife Club can point with pride to the reestablishment of the wild turkey in this part of Nebraska, from the modest start of four hens and two gobblers they turned loose in 1953.

# New Mulching Machine

## *Aids vegetation of flood control structures*

By EARNEST A. CHRISTIE

NECESSITY spurred Robert and Donald Wirth to start building their new mulching machine. So far as they know there is no other machine like it in use today.

In the fall of 1958, a seeding contract was awarded to A. D. Wirth & Sons of Vesper, Kans., to seed floodwater retarding structures and waterway improvement work in the Little Delaware-Mission Creeks watershed of Brown County. The contract specified 2½ tons of good quality prairie hay per acre to be distributed evenly over the seeded areas.

The Wirths had only a field cutter with which to do the required mulching. Use of the field cutter necessitated windrowing, driving over, and blowing the hay onto the seeded areas. Robert readily admits, "We started out on a shoestring as far as a mulching machine was concerned."

Although the Wirth brothers were long on patience and perseverence they were short of their goal on accomplishment. With only 40 percent of their contract completed, cold weather set in and a winter shutdown was in order.

Robert and Donald arrived on the scene the following spring with the announcement they had invented a new mulching machine they thought would get the job done. It wasn't that easy. The first time the machine was used on prairie hay disappointment was the order of the day. Donald said, "We have too much invested in this thing to give up now. We think we can make it work." An auger was installed to feed the hay into the blower, some belts were tightened, and a successful mulching machine was in operation.

The machine is powered by a power take-off from a farm tractor. It is designed to carry 60 bales of hay on the platform, and can handle mulch at the rate of about two bales per minute if the hay is in good condition. At this rate mulch can be applied to 1 acre every 36 minutes of operating time. Additional time for loading and hauling will depend upon the distance from

Note:—The author is soil conservationist, Soil Conservation Service, Hiawatha, Kans.

**Robert and Donald Wirth operating their mulching machine on the slope of a floodwater retarding structure in the Little Delaware-Mission Creeks watershed.**

haystack to seeding area and upon available manpower. The machine requires a minimum of three men to operate—one to drive the tractor, one to feed, and one to handle the blower.

Donald made the remark, "Maybe we can use this back home to mulch potatoes." He may have been jesting about the potential use of this machine, but it has some possibilities from the viewpoint of a conservation cooperator. For instance, how much would it be worth to a farmer to be virtually assured of getting a good stand of grass in that new waterway he just seeded? How much would it have been worth to another farmer who seeded his waterway three or four times and now has a weed patch with a gully in it to show for his efforts? Mulching waterways can be especially beneficial if poor soils or steep slopes are a factor.

**Machine used by the Wirth brothers to anchor mulch spread by their mulching machine.**

The value of using mulch to obtain a stand of grass is well recognized. The mulch breaks raindrops as they fall, holds moisture, and reduces scouring from runoff. At the rate this machine can apply prairie hay, a waterway 1,000 feet long and 40 feet wide could be mulched in less than an hour of actual operating time.

Immediately following the mulching operation, mulch material should be anchored to reduce the hazards of wind and water erosion. On the above-mentioned seeding contract a weighted anchoring machine, featuring straight-set serrated discs of 12-inch spacing, was used. A closer spacing might have been desirable. Insofar as possible anchoring was done across the prevailing slope.

## Stubble Mulch Judging Contest

The first known Stubble Mulch Judging Contest for 4-H Club and FFA members was started at Scottsbluff, Nebr., in the spring of 1958, when a training meeting for 4-H leaders was held. Extension Agronomists C. R. Fenster and Chet Swinbank, and Extension Conservatioist Harold Gilman were among those who attended the meeting and later helped in developing a scorecard and rules for future contests.

A preliminary contest was held at the Box Butte Experiment Station at Alliance, Nebr., in the fall of 1958 with Alliance FFA members competing. From this contest the scorecard and rules were refined and published.

Area contests were held at Alliance and Imperial, Nebr., in the fall of 1959 in conjunction with land and range judging contests. These contests were sponsored by the Extension Service, Soil Conservation Service, Vocational Agriculture departments, and Soil Conservation Districts of western Nebraska. The principal contestants were FFA and 4-H Club members, but several adults participated.

The main objective of these contests is to train contestants in determining the effectiveness of stubble mulch soil cover for wind erosion control, though some consideration is given to other soil management practices. With modifications the scorecard and contest rules might be used in areas where water erosion control or moisture conservation are the chief problems.

Pointers on staging stubble mulch judging contest, along with a copy of the scoreboard, are given in an Extension Circular published by the Box Butte Experiment Station, Alliance, Nebr.

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**GRASS-CLOVER MIXTURES IN BEEF TRIALS.**—Two grass-clover mixtures gave "very satisfactory results" in a 3-year beef-production test conducted at the University of Kentucky Experiment Station. A mixture of Kentucky bluegrass and white clover produced $81 worth of beef per acre and gave an average daily gain of 1.65 pounds. A mixture of smooth bromegrass and Ladino clover produced $79 worth of beef per acre and gave average daily gains of 1.7 pounds. A mixture of bluegrass and birdsfoot trefoil produced $57.60 worth of beef per acre and averaged 1.46 pounds daily gains.

# *Pequest Watershed Points th*

By JOHN F. BOZZUFFI

THE Pequest pilot watershed protection project in northwest New Jersey is completed and there are no floods now.

With relief from floods have come increased crop harvests that mean better business to storekeepers and businessmen in the Hackettstown area. Higher land values mean increased tax income to the municipalities. A renewed confidence in crop production encouraged the farmers to organize their own vegetable marketing cooperative.

There are no more sleepless nights when the rain starts to fall because the Pequest River now remains within its banks. "Our worries are over," says Stanley Kott, who has spent years fighting water problems on the meadows. "Now we can get on the land early in the spring and be sure of harvesting our crops."

Mike Kenny, who can remember floods since he was a boy, said: "Our flooding problem is licked and our land values have jumped $300 to $700 an acre." These are the reports that farmers in the Great Meadows and Alphano muck areas in northwest New Jersey are making.

The Pequest was one of the original pilot watershed projects authorized in 1953 and started in December 1955. As early as the spring of 1957, after heavy rains and with only part of the construction work done, flooding did not stall farming operations or damage crops.

The 1,000 acres of rich vegetable land lying within the 69,120-acre watershed were an easy target for the Pequest floodwaters. Small floods had occurred almost annually. Big floods were repeated every 5 to 7 years, like the one in July 1945, which caused over $500,000 damage to crops of lettuce, carrots, and onions.

News of the pilot watershed program reached the supervisors of the Warren and Sussex Soil Conservation Districts in 1953. They felt this was a way to get the hard working truck farmers out of trouble. The two districts agreed to cosponsor the project.

Representatives from the districts, town, county, and state governments, Pequest Water-

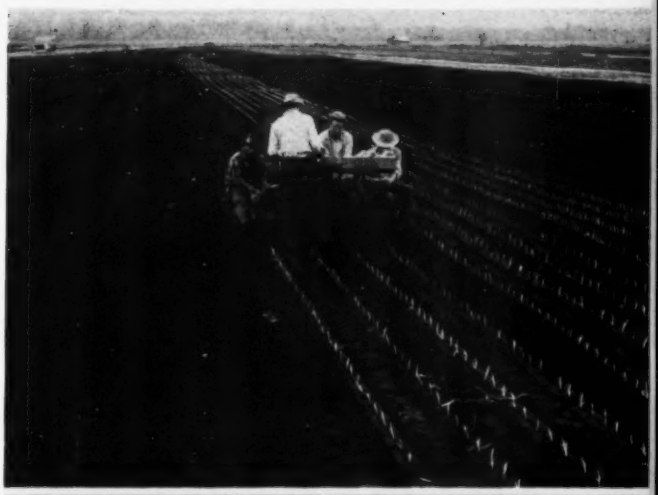
Note:—The author is work unit conservationist, Soil Conservation Service, Hackettstown, N. J.

# nts the Way

shed Association, Soil Conservation Service, Extension Service and other agencies helped to develop the work plan for the project. The plan contained a detailed description of the watershed problems, the work to be done, who was to do it, and the cost.

Ten miles of the main channel of the Pequest required improvement. Debris had to be removed, the channel deepened, widened, straightened and several sections riprapped to increase the channel's capacity. Local people installed more than 3 miles of main outlet channels leading from the muckland as part of their contribution to the project.

Within the watershed were 310 farms. More than 90 percent of them were in the upland area. Some of the farmers had already applied



**Pictures: (lower left) Draglines dredging the Pequest channel . . . (lower center) The Great Meadows muckland under flood water . . . (upper right) Planting truck crops in the early spring on the Mike Kenny farm . . . (center right) Mike and Mrs. Kenny look over their bumper crop of onions . . . (lower right) Harvesting lettuce in early June on the Kenny farm.**

conservation measures to their land, but a lot of work still had to be done. With a concerted effort the farmers went to work. At present a little over 80 percent of the planned soil conservation practices are actually on the land.

With the extra help offered, the farmers in the upland areas were able to install conservation measures at a faster rate. Along with contributing to flood prevention, the stripcropping, diversion ditches, revegetation, conservation crop rotation, and reforestation helped to hold the soil and water in place and increase crop yields.

The project cost about $700,000. Jack Rogers, a local produce buyer, says: "The project will eventually pay for itself with the increased taxes the farmers will be able to pay. I have had to pay more taxes this year myself because of increased business with the truck farmers."

Economists have estimated that for each $1 spent on the project a $3 dividend will be returned.

The Pequest pilot project helped point the way in solving such problems as obtaining land easements and rights-of-way, construction difficulties, weather setbacks, and many others that were worked out successfully.

A new watershed project is in operation, under Public Law 566, on the Paulinskill River, a neighboring watershed. Already the Soil Conservation Service, district supervisors, and local organizations have taken precautions to avoid the unforeseen difficulties encountered on the Pequest. The Pequest, like many of the other pilot projects paved the way toward an even more effective and beneficial watershed program for the future.

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***Soil tests for insecticides?***

It may be necessary in the future to analyze soils for insecticides before planting certain food crops. That word of warning comes from E. P. Lichtenstein, University of Wisconsin entomologist who has learned that certain crops take up soil insecticides into the edible plant parts.

Too much of certain insecticides—or too frequent applications—may actually put enough insecticide residue into the crop to render it unfit for market at harvest time. Further research may show more about insecticide uptake in crops, giving facts needed to use the insecticides safely without lowering their effectiveness.

# *Local People Solve Flooding Problems in Ashley County*

By CLAUDE L. PRICE

HEAVY rains in the spring and again in the fall of 1958 moved 46 landowners at Montrose, Ark. into action on their drainage and flood problems. Immediately after the May rains, landowners started calling and coming by the SCS office at Hamburg, requesting technical assistance to prevent future flooding of their lands. Charles Henry, the work unit conservationist, explained to the callers that more than just a few people would have to become interested for the project to become a reality. He told Mr. LeRoy Naff and Mr. Sam Wilson, local landowners, that SCS personnel would be glad to explain to all landowners the details of getting a water-control project started.

The day before the landowners met there was a 9-inch rain!

"This was the heaviest rain to be expected once in a hundred years," said SCS engineers.

The day after the big rain, the 46 landowners met and elected LeRoy Naff president and W. C. Streeter secretary-treasurer of the informal organization called the "Ward Bayou Group Drainage Association."

At the first meeting, SCS technicians provided a tentative plan indicating locations of needed ditches and giving preliminary cost estimates. They explained that if enough interest were shown the Soil Conservation Service would make a detailed survey. After some discussion, the landowners signed an application for assistance with the Ashley County Soil Conservation District.

Their next step, after the preliminary survey, was to sign easements to allow each landowner access to an outlet and to talk over construction costs and make arrangements for funds to pay for the 250,000 cubic yard project involving 9.2

Note:—The author is area conservationist, Soil Conservation Service, Monticello, Ark.

miles of main ditches and laterals.

The preliminary cost estimate was $39,400 for excavation and spoil-bank shaping, clearing, and bridge construction. The cost to individuals for access to the provided outlets was $3.50 per acre of land benefited.

Local landowners say that rains with only moderate intensity cause annual losses of $6 to $10 per acre for replanting, late operations, and inability to properly cultivate and harvest. Annual benefits are figured at $7 per acre, which will pay total construction costs of all drainage systems within 2 years.

Since the project was on the county lines, the ASC county committees of both Ashley and Chicot Counties agreed to furnish $9,600 each and the local people agreed to pay $2 per acre. One-half the work was accomplished the last part of 1958; the remainder the first part of 1959.

A key item which made the Ward Bayou project possible was the recent construction of the Big Bayou outlet ditch by the U. S. Army Corps of Engineers.

**Flooded farmland near Montrose, Ark., before drainage project was started. (Above.) The same area after the group drainage project was completed. (Below.)**

# *Grass-Based Rotations*

## *—Serve Three Purposes*

By H. E. VAN ARSDALL and ALBERT P. BOYD

GRASS production, as used by R. L. Price, is a "triple threat" practice in his conservation farming operation. Grass for feed, erosion protection, and soil improvement has proven itself on his farms in the Holmes Creek and Chipola River Soil Conservation Districts of Florida.

In carrying out his soil and water conservation plan, Price's first grass planting was made in 1945. This 65-acre Pensacola bahiagrass planting has grown to 500 acres. Along with this increase in grass his 13 head of purebred Shorthorn cattle have multiplied to 200 head of cows and heifers. During this period the sale of breeding stock has become an important part of his farming operations.

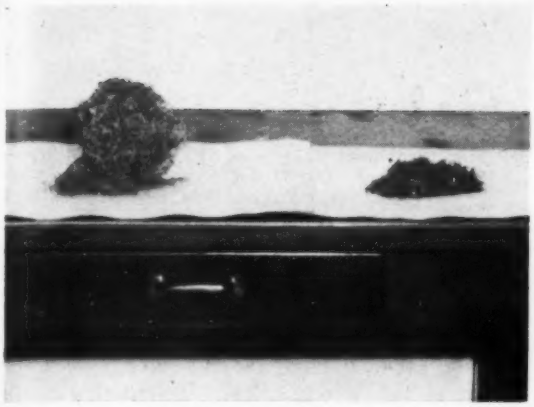
The earlier grass plantings were made on the sloping and poorer soils primarily for erosion control and cattle feed. In 1953, Price decided to give his grass-based rotation idea a trial. Soil-building crops had been limited to winter annuals such as blue lupine and small grain. These crops were beneficial but weather conditions frequently limited their growth. Sod in regular rotation with cropland was a natural development in his soil improvement program.

General farm crops are grown along with peanuts, the chief cash crop. The farm allotment of 90 acres of peanuts helps stimulate the best in a conservation cropping system. His system of 3 years or more in sod and 2 years of peanuts or other cultivated crops is balancing out his need for both grass and cultivated land. It has proven effective in increasing average yields. The best example of its value, however, came in a poor peanut year.

Price said, "In 1954, I had a 35-acre field of peanuts on old cropland that produced only 5 tons of nuts—a failure. The same year a field following sod produced 30 tons on 65 acres. Had it rained, we would have made a record yield on the sod land. We need practices that will save us from complete failure in poor years as well as give us increased yields in good ones."

Note:—The authors are, respectively, management agronomist and work unit conservationist, Soil Conservation Service, Lake City and Graceville, Fla.

**Peanut crop following bahiagrass sod as part of a strip crop rotation on the R. L. Price farm.**



**Dried grass residue from 1 square foot, 7 inches deep, of soil on the R. L. Price farm (left) at the end of the first year of cultivation after plowing under Pensacola bahiagrass sod; (right) the residue from a similar field after 2 years of cultivation. The amounts of dried residue on these fields were about 500 pounds per acre after the first year and 250 pounds per acre after the second year of cultivation.**

He pointed out the value of fertilizing the grass used in the rotation and remarked, "The feed produced by the grass in a rotation is as important as the return from a cultivated crop."

Thus grass is assuming importance as a soil improvement crop. Its value in producing livestock feed and preventing erosion has long been known. Its ability to improve soil is proving equally as important.

As a member of the State soil conservation board and State director of the farm bureau, Price's influence extends beyond the boundaries of his own district. Many visitors from other sections are impressed with conservation farming methods in use on his farms. The 1,400 acres of sod rotations in his own district is only an indication of his leadership in conservation farming throughout the state.

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**SOLUBLE PHOSPHATES BEST IN BANDS.**—Research at the Michigan Agricultural Experiment Station shows that phosphate fertilizers with over 40 percent water soluble phosphate help plants more if they are placed in bands along the plant rows. The more insoluble phosphate carriers, however, are said to do a better job when broadcast and mixed with the soil. Where soluble phosphate fertilizers are broadcast, much of the plant food is tied up by reactions with soil minerals before the crops have a chance to use it.

### *Hardboard plant waste as a canal sealant*

A 1957 test study in Hood River County, Oreg., showed that hardboard plant waste effluent was effective in checking seepage from irrigation canals. The study was carried on cooperatively by the local irrigation district, soil conservation district, county engineer, a lumber company, and the Hood River Chamber of Commerce.

Volunteer labor hauled and pumped more than 200,000 gallons of the plant waste into a main canal of the Hood River Irrigation District. Built in 1910, the test canal had received loads of ashes, concrete, and various pulps in attempts to seal its porous shale surface, but to little avail until the hardboard effluent was used.

The finely divided wood fibers in the hardboard plant waste effectively sealed the canal. The test showed that approximately 800 acre-feet of additional water was made available to the district that season. This extra water was enough to make the difference between profitable crops and crop failures in years of critical supply, according to reports of the testing agencies.

A published detailed report of the test studies was recently made available to interested organizations by the Hood River Chamber of Commerce.

"GRASSES AND LEGUMES WILL KEEP US OUT OF MR. McGREGOR'S CABBAGE PATCH!"

Group action solves—

# Water Problems

—on Little Lost River

By BENNY MARTIN

WATER always has been the major problem facing farmers and ranchers of Butte County, in southeast Idaho. The history of the area might well be written from the experiences of the residents in using the waters of the Big and Little Lost Rivers.

With the organization of the Butte Soil Conservation District in May 1953, the supervisors prepared a program and plan. Naturally they considered water conservation their major problem. With only limited storage on the Big Lost River watershed, and none on the Little Lost River watershed, water must be conserved in transportation, in the irrigation systems, and on the farms and rangelands.

To accomplish this, farmers and ranchers have worked together in many ways; swapping labor, sharing costs, providing materials and rights-of-way, and exchanging use of machinery. Some of these projects have received cost-sharing benefits from the Agricultural Conservation Program Service to assist in furthering the conservation of water in the district. Some projects have been financed entirely by the farmers and ranchers involved.

One of the first steps taken by the district, with the assistance of Soil Conservation Service technicians, was to establish snow survey courses on the Little Lost River watershed, to be used with the established courses on the Big Lost River watershed. These courses are used to prepare a forecast of the water supply on both watersheds. The district supervisors sponsor and conduct an annual water forecast meeting, at which time SCS technicians discuss the water supply outlook for the coming season, and the conservation practices which will enable the farmers and ranchers to make the most efficient use of available water during the season.

Note:—The author is work unit conservationist, Soil Conservation Service, Arco, Idaho.

With the large watersheds of the district and only limited storage, farmers and ranchers are faced with the problems each year of peak flows that exceed storage facilities, flash runoff causing serious flood damage, and too much water at the wrong time. Recognizing their problem, the local people, with the leadership of Wendell Hansen, chairman of the board of the soil conservation district, and Emlen Mays, chairman of Water Users District No. 9, have made application for assistance under the Watershed Protection and Flood Prevention Act, P. L. 566.

Meanwhile, many temporary measures to control the water on the watersheds are being carried out, such as bypassing areas where water is lost in the transportation system, and installing temporary control structures on highly erodible streams having high peak flows for short periods.

Snow surveyors at work on the Little Lost River watershed.

One of the old diversions and headgates on Little Lost River that needed replacement (above). The new diversion and headgate that replaced it (below).

Replacement and relocation of three river diversion and headgate structures in Little Lost River have brought benefits to 40 farms in the valley.

The work was done at a cost of $18,140. This investment will be recovered from more efficient services during the next few years. The overall job was handled as three separate projects, each handled by a separate group of farmers.

Structures formerly installed in the stream had settled and become damaged by frost heaving. The sites had become overgrown with willows, which took up a large amount of water needed for production of crops on the 40 farms. Large amounts of silt and debris had accumulated around the sites.

Due to these and other handicaps, it had become difficult to divert a sufficient amount of water to meet cropping needs, or to obtain an accurate measurement of the amount of water supplied to farms.

Action to remedy the situation was taken in 1955, when farmers and ranchers requested assistance of the Butte district in locating new sites and establishing new diversions and other necessary structures. SCS technicians did the planning, and work was started in the fall of 1956.

A feature of the construction now completed is the uniformity in design and construction of the diversion dams, headgates, and measuring devices. The structures are established at the same elevations to assure accurate measurement of water.

Revision of the irrigation systems on the farms is another important step in the conservation of water in the district. Installation of pipelines, division boxes, drop structures, and land leveling are all a part of this important program.

Methods of irrigation also play an important part in the water conservation program of the district. Sprinkler irrigation is being used on the rough lands and shallower soils. In surface irrigation, proper lengths of runs for individual soil conditions are being used. Furrow, contour, cross slope, border, or corrugation irrigation are being used as required.

The use of recommended adapted crops, planned rotations, and revised field layouts through farm planning also make up the job of water conservation on the farms of the district.

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### *Better weed killers for corn*

Field trials at the Wisconsin Experiment Station show that the new herbicides simazine and atrazine help control annual weeds in corn better than most chemicals now in common use.

A single application of simazine or atrazine, at the rate of 2 pounds per acre, was made soon after planting. This gave good early season control of both broadleafed and grassy weeds. A single cultivation after corn plants came up took care of the few weeds that escaped, and no further chemical treatment was needed.

Simazine and atrazine are more expensive than chemicals commonly used, but the advantages of fewer cultivations and higher yields from weed-free corn fields more than offset the expense, according to the Wisconsin agronomists.

*Rebuilding topsoil for the*

# *Island of Grapes*

By VERN R. NELSON

THE Island of Grapes, but for how long? Stretch Island, in eastern Mason County, Wash., has been known for its rich crop of Concord and Island Belle grapes for years. The making of juice and wines adds additional revenue to the county's total resources.

But as the years go by, yields from the once bountiful fields are slowly dropping. Field after field of grapes has been abandoned. Why? The climate has not changed, the rainfall is the same.

In 1958, the Mason County Soil Conservation District, then only a year old, became concerned. The district supervisors asked the local Soil Conservation Service technician to check on the problem. The technician went to Stretch Island and his first stop was at Robert Ellison's farm.

Ellison had purchased the place the winter before. As he and the technician walked to the grape fields, Ellison remarked that the soil fertility was low and the ground hard.

Between the rows of well-pruned grapevines on the sloping land, one thrust of a spade told a story which people too often overlook. The productive topsoil was gone! The grapevine roots reached just a few inches below the surface. They could not penetrate the hard subsoil. Winter rains no longer soaked into the soil, but ran off, carrying even more of the lifeblood of that field away.

The once fertile, friable topsoil, filled with billions of living microscopic organisms—bacteria, fungi, and larger organisms—was gone.

Ellison remarked that now he knew where that topsoil could be found. A few days earlier, he had been pruning grapevines on a lower, flat area. He noticed that the main grapevine stock had been pruned down to the ground. Checking closer, he found that the new stock was once a branch from the old stock. Seeing that the topsoil was gone from his upper field, he now realized that the original grapevine had been completely covered by 2 feet of fertile topsoil, and a new main stock had to be pruned up to produce the new grapevines. The grapevines in the upper part of the field were starving while grapevines on the lower land were being smothered by topsoil washed from the upper fields.

The technician asked Ellison if he would consent to have 10 acres seeded to a winter cover crop to see whether or not heavy loss of topsoil could be stopped and fertility and structure rebuilt. Ellison agreed.

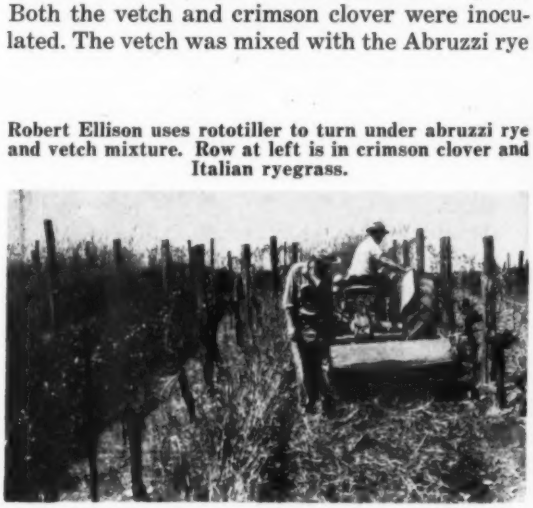
Ellison and the technician plannned two types of cover crop—one for rapid, tall growth and one for rapid, low growth. They had in mind the growers who had only a disc to turn under the cover crop in the spring and needed a low-growing crop so they could handle it. Farmers who had equipment to turn it under could use the tall-growing cover crop.

Two mixtures were planned: Abruzzi rye, 70 pounds per acre, and common vetch, 30 pounds per acre for tall growth; Italian ryegrass, 10 pounds per acre, and crimson clover, 10 pounds per acre for low growth.

Ellison applied three sacks of 10-20-20 fertilizer per acre. The SCS plant materials center at Corvallis, Oreg., approved the field-size planting test and supplied the necessary seed.

Seeding was scheduled for September 15. As the time drew near, Ellison rototilled between the rows and disced in the fertilizer lightly. Both the vetch and crimson clover were inoculated. The vetch was mixed with the Abruzzi rye

**Robert Ellison uses rototiller to turn under abruzzi rye and vetch mixture. Row at left is in crimson clover and Italian ryegrass.**



Note:—The author is work unit conservationist, Soil Conservation Service, Shelton, Wash.

and clover with the Italian ryegrass. Each of the two mixtures was seeded between alternate rows of grapes. In the center of the 10-acre field four rows were left without a cover crop for comparison purposes.

Ellison and the technician watched the cover crop during the fall and winter. During heavy rainstorms, soil with the cover crop seemed to absorb water but on the soil without cover, heavy ercsion and low absorption were observed.

Ellison believes that if the heavy loss of topsoil can be stopped, moisture retained longer, and fertility built up, he may produce as many grapes on half his acreage as he does now on all of it. Not only can Ellison produce more per acre, but other grape fields, now out of production, may again bring needed revenue to the farmer and strengthen the local juice and wine industry.

# A Soil Sample Display Panel

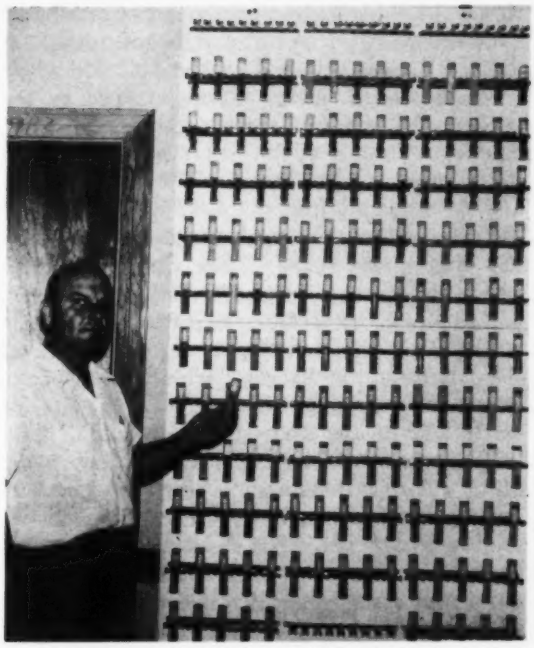
By LEON J. SISK

SAMPLING and describing soil profiles is an everyday part of the soil survey program. Vial samples of most of the soils in the country are on file in principal correlators' offices. A field soil scientist seldom has a problem in obtaining samples of soil horizons, but he has often run into trouble in trying to file or display such samples.

State Soil Scientist D. L. Fontenot of Louisiana was having such trouble, and he did something about it. He made a portable display panel that will accommodate most of the important soil samples of his State.

It is largely used for in-Service training but is also being used by SCS personnel in school and college classrooms and for other academic purposes to get more people to make greater use of soil classification.

Fontenot hinged two pieces of ⅜-inch marine plywood, 36 x 40 inches, together to make a panel 72 x 40 inches when extended. Metal racks for rubber stamps were attached to the boards to hold 4-inch, stoppered glass vials containing soil samples. Each rubber stamp rack holds five vials. There are six rows of racks on each of the two boards, with three racks in each row and each row 6 inches apart. This provides space for 180 soil samples.



D. L. Fontenot with his portable soil display panel.

The boards are painted white so soil colors will show up most effectively. The rubber stamp racks were obtained from the GSA supply catalog.

If inconvenient to hang on a wall, the boards can be folded to about 30 degrees and the panels displayed in the shape of a pup tent with soil samples on each side of the "tent" wall, for viewing from either side.

When the panels are to be transported by car to a meeting or for display, door stops are screwed into each of the four corners of one of the boards. The boards are then folded together, and the panels slipped into the trunk of the car where they rest on the door stops without damage to the rubber stamp racks.

The two boards, without the soil samples, weigh about 30 pounds and can easily be carried by one person. With the 180 samples attached the display still weighs under 75 pounds.

Note.—The author is information specialist, Soil Conservation Service, Spartanburg, S. C.

Handles are attached to each end of the panel so that it can be carried easily when folded.

Each bottle is labeled with a 1-inch white gummed sticker. Information is typed on the sticker: the name of the soil series, soil type, and depth of layer or horizon. The stickers also contain the genetic nomenclature of the soil and the mapping unit number. The labels also show by alphabetic number the county where the sample was taken. Since the samples are removed from the board when it is being transported or changed to make up arrangements of different soils for specific purposes, the information on the labels enables nontechnical personnel to arrange the samples on the board easily and in any desired arrangement.

The gummed labels could include land capability classification, engineering classification, and the soil productivity rating for various crops such as site-index class for a given tree species as well as its adaptability for the production of other crops.

The panel is easy to construct and the materials inexpensive. The benefits obtained from its use many times outweigh the cost of the panel. Additional information regarding the panel may be obtained by writing D. L. Fontenot, Jr., State soil scientist, SCS, Alexandria, La.

◆

What happens to the corn land of the Corn Belt, the wheat land of the Wheat Belt, the cotton land of the Cotton Belt, the vegetable lands of the Southeast, the fruitlands of California, and other producing areas is eventually reflected in the business of New York, Chicago, San Francisco, Dallas, Atlanta, and Denver. What happens from day to day to the crops growing on these lands is reflected almost immediately in the big commodity exchanges throughout the nation.—Hugh Hammond Bennett in THE HUGH BENNETT LECTURES published by Agricultural Foundation Inc., North Carolina State College, Raleigh.

◆

History proves that industrial development is unstable unless it rests on a broad adequate foundation of productive land.

◆

In 1681 William Penn wrote an ordinance requiring that in clearing land, one acre in every five should be left in trees.

## DISTRICT PROFILE

### W. W. NAFF of VIRGINIA

FOLKS who live in the rolling hills of Franklin County, Va. say nowhere in the Old Dominion has outlook for the land changed so remarkably for the better. "That's where the 'bare ribs' of the old Blue Ridge farm slopes were sticking out like a starving, wild hog's 20 to 25 years ago. Now look at 'em, sleek and fat," is a typical comment.

In truth, it takes a sharp eye to find a washed-out hillside, a naked gall spot, or a big gully scar in Franklin County. A lush, sod mantle protects the soil from woods to woods. Contoured ribbons of close-matted alfalfa and orchardgrass guard plowed fields during the rain. Curving terraces and green meadow strips take water leisurely to the creeks.

Ask any local farmer what happened and he will tell you about the Blue Ridge Soil Conservation District and, very likely, a gentleman named Wesley W. Naff, Sr. If you are lucky you just might catch up with Naff at his Retreat Dairy and Fruit Farm near Boones Mill. More likely, friendly Mrs. Naff might inform you that her husband is afield with other members of the Virginia Board of Agriculture, the State Soil Conservation Committee, or Association of SCD Supervisors.

When overtaken, Wesley gives a quiet account of the transformation—so quiet it adds drama to the tale: How he and other thoughtful farmers awakened to the reality that their lands were slipping out from under them with every rain. Then, they heard about the new soil conservation program and a camp of the CCC boys over at Chatham, and managed to get a camp established in Franklin.

Shortly, came formation of the Blue Ridge Soil Conservation District eventually straddling five hilly counties and embracing 3,663 farm cooperators. Wesley's life became that of an earlyday circuit-rider, carrying the message of the soil to farm meetings far and wide, working for stronger support from Richmond, seeking the best advice of agricultural brainpower centered at VPI in Blacksburg.

Meanwhile, there was the wife, five daughters and a son to care for, along with a herd of Holsteins, a 35-acre orchard, and 50,000 broilers a year. "I guess it's obvious—it *should* be—I couldn't have gotten around the way I still do, without Mrs. Naff backing me all the way," he confesses.

The Naff's conservation farming plan was in fact, a family plan. With it, they pioneered and helped introduce a whole catalog of soil and water practices to the Blue Ridges. They blanketed 125 acres with new, high quality pasture sod—so they could carry 60 cattle where they once carried 20. They set their acres of peaches and apples completely on the contour. They switched eroding corn fields to proper sites and by using conservation methods raised three times as much on less space.

They built two ponds and were among the first in the Old Dominion to irrigate peaches. Then too, they conserved enough water to satisfy 100 cows.

Working with the preachers at the Antioch Church of the Brethren, they helped instill a sense of soil stewardship that has become part of the conscience of rural communities throughout Blue Ridge country. This church is now a rallying point for local conservation tours and in recent years has been host to a conservation tour of the Louisiana Bankers Association.

Mr. and Mrs. W. W. Naff.

Wesley thinks that a man's first obligation is, of course, to his family and church; secondly, he thinks, comes the responsibility of leaving the land as good, or better than he found it for those who follow. Actually doing conservation farming is important, but even more so, in Wesley's mind, is influencing neighbors and others to do so. "This", he says, "helps the whole community, county, district, and state to improve. The greatest reward I can receive for giving time to the conservation cause is the satisfaction that saving the land is the second most important thing a man can do, along with radiating that influence to others, both old and young."

Wesley's voice, familiar to Virginia soil leaders for two decades, was recently heard on a statewide radio network. Said he, "Small watershed projects, with their overriding benefits, have attracted more town and city people to soil conservation than any approach we've known thus far. As more people move to the city the need for the broad conservation program increases."

The voice of Wesley Naff is also heard in Washington. Since last fall, he has served on USDA's Soil and Water Conservation Advisory Committee.

—WILLIAM D. RICHARDSON

### *Planning reduces highway costs, checks erosion*

By advance planning in connection with his conservation farm plan, Bryce Vollmar, Ida County, Iowa, obtained a double benefit from new highway construction and saved money for himself and the public.

When highway engineers planned a new highway across the south end of his farm, Vollmar asked that five culverts be placed higher than usual so they would impound water. He signed an agreement and gave an easement for the land which the ponds would cover. Since the higher culverts could be shorter, the Highway Department saved money and Vollmar obtained five farm ponds and checked erosion in five gullies. Vollmar is a cooperator with his local soil conservation district and the land above the ponds is stabilized with terraces, contour farming, and waterways. The ponds also supply water for livestock in his pastures.

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## REVIEWS

**EFFICIENT USE OF FERTILIZERS. Revised. Edited by Vladimir Ignatieff and Harold J. Page. 355 pp. Illus. 1959. FAO Agr. Studies No. 43. Columbia University Press: New York. $4.**

THE first edition published in 1952 has been extensively revised and enlarged. Like all publications of Food and Agriculture Organization of the United Nations, it is available in English, French, and Spanish.

The chapters include The Role of Fertilizers, Plant Nutrients, Organic Matter, Commercial Fertilizers, Factors Affecting the Use of Fertilizers and Manures, Time and Method of Fertilizer Application, Cropping Systems and Fertilizers, Plant Nutrient Relationships to Soil Regions, Crops and their Soil and Nutrient Needs, Economic Aspects, and The Farmer and Agricultural Services.

The book is intended for agricultural planners, advisers, teachers, and others who work with farmers and farm organizations. It presents the most important information from the world viewpoint, and would be of particular value to Americans taking their first foreign jobs, and to teachers who wish to give their students the basic elements of tropical agriculture.

—GUY D. SMITH

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New Hampshire was the first State to complete its inventory of soil and water conservation needs.

**IRRIGATION ON WESTERN FARMS** is the new Agriculture Information Bulletin No. 199 that was issued cooperatively by the Soil Conservation Service and the Bureau of Reclamation. This outstanding publication was prepared by L. R. Swarner, Maurice N. Langley, and John T. Maletic of the Bureau of Reclamation and John T. Phelan, L. F. Lawhon, Dell G. Shockley, and Ralph H. Brownscombe of the Soil Conservation Service.

◆

Use of larger farm machinery and farm labor shortage create new problems in planning terrace systems.

◆

Some farmers in states such as Kansas, Nebraska, and South Dakota are using contour bench leveling to control erosion on irrigated lands.

### *Advisory group commends watershed program*

The U.S. Department of Agriculture's 18-man Soil and Water Conservation Advisory Committee, including representatives of various interests across the country, in a recent meeting in Washington, commended the watershed protection and flood prevention program.

The committee pointed out that the watershed program is one in which urban people can join with soil conservation districts and land operators in resource conservation programs of real value to the entire public.

It urged the Department to give continuing emphasis to scientific soil and water conservation, with the greatest possible participation by State and local governments and local people, as a means of meeting future crop and water needs at the lowest possible production costs. Here again it emphasized mutual benefit to city people as well as farmers and ranchers.



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